

Science and Invention

100 Years of Detachable Collar

JUST where the idea of wearing a collar originated no one seems to be able to establish definitely. All of the official pictures of Adam show him without one. Information from the time he lived is lacking.

Vague as the origin of the scheme of wearing some sort of an adornment on the isthmus which connects the head and the shoulders may be, there is at least one development of the idea on which definite data are obtainable—namely, that 1919 is the centenary of the detachable collar.

Jumping from the head necklace age into a more decorative age, one can find that in 1760 the New York haberdasheries were pushing a very fancy article of gold or silver vellum fringe which cost considerable and didn't have to be laundered.

Ploughing along still further in the evolution of neck incasement, we come to the year 1819, when men were wearing collars which were quite like those of to-day, but attached firmly to the shirt with which they were to be worn.

Those were the days when housewives looked forward with concern to wash day, because to the fastidious man a shirt was good for only one day, because of the fact that his collar became soiled in that length of time. Housewives had no laundresses, he it known, and seven shirts with collars attached meant considerable effort at the family tub.

Solved by a Woman

It was a woman's problem, and it was a woman who solved it. Hannah Montague was the wife of a big, heavy blacksmith. It is hard to imagine any one who could get a collar more thoroughly soiled than a blacksmith. Mrs. Montague used to lie awake nights trying to figure out a way to keep her husband's collar clean and her washing down.

Finally one night it came to her. She conceived the idea of having a collar separate from the shirt. She lost no time, and the next day made her blueprints and set to work. That night the blacksmith tried it on. That week she had the lightest washing that had ever been known in Troy up to that time—for it was in Troy, N. Y., that the Montagues lived and blacksmithed.

Montague was proud of her handiwork and lost considerable time at the anvil, because he stopped to show it to every one that passed.

There have been hundreds of changes in that old-fashioned stock that Hannah Montague made. The stiff linen collar finally came and it is considered the standard of the present day. In itself it represents a hundred more changes.

Not the least of the developments is the celluloid collar and its shining ally, the rubber collar, which is found practical in the country because one can plough all day with it on and then wear it to supper at night.

To-day in Troy

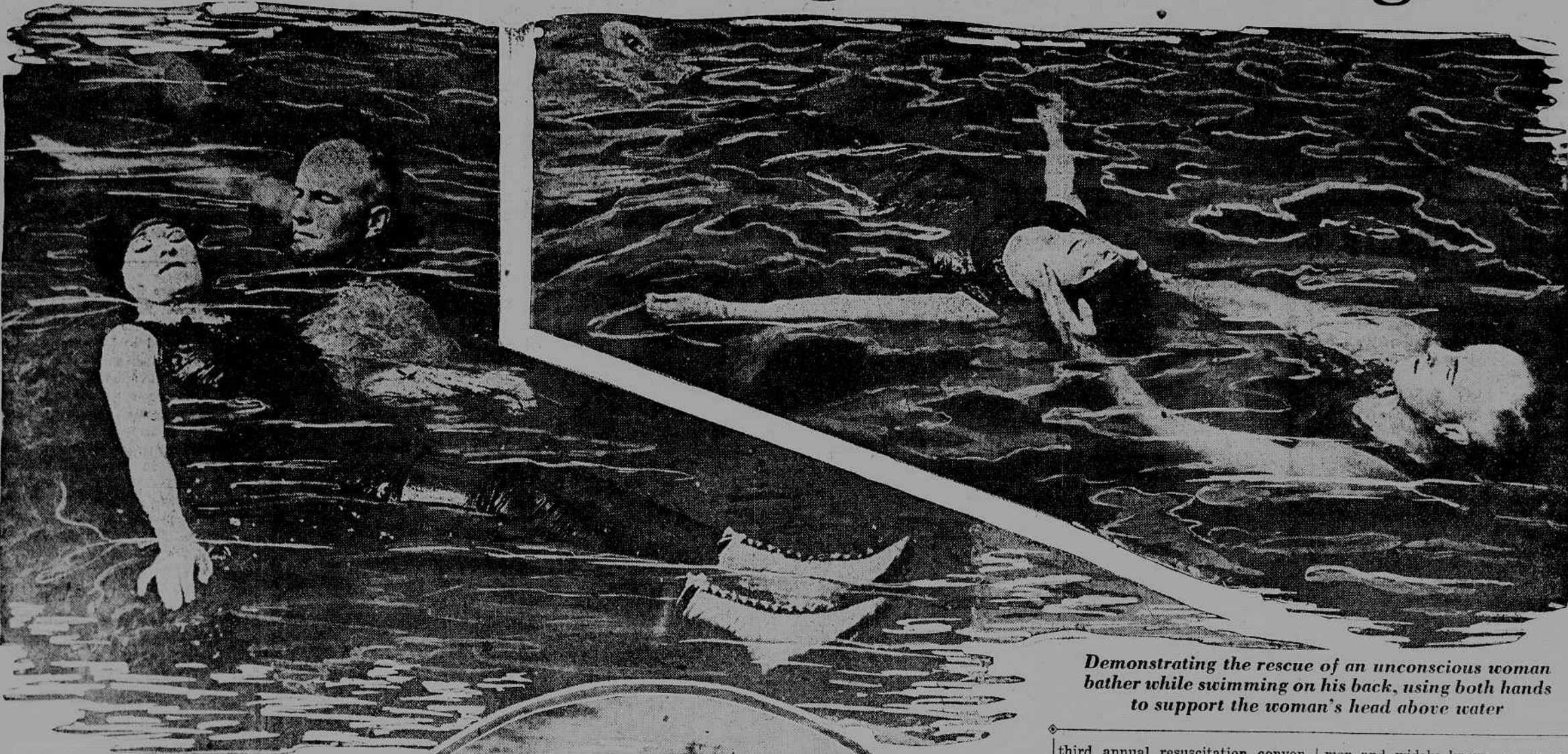
Now two hundred thousand yards of goods are used in a day by one factory in the town where Hannah Montague used to toil away on considerable less than one yard an epithet working day. One ton of thread is used every week in the town now to make collars. One spool used to last Hannah two weeks.

But the business was hardly a lucrative one for Mrs. Montague. She could grind out only about one collar a day, and what with all the labor it took there wasn't much profit in the small amount she could charge for those she sold.

It remained for an enterprising townsman, the Rev. Ebenezer Brown, to commercialize the affair. Mr. Brown conducted a store in Troy "at the corner of River Street and the shipyard," and it wasn't long until his window contained a display of the articles. That was 1819—one hundred years ago.

To-day in Troy there are seven square blocks of collar and shirt factories within a mile radius and capital to the sum of \$35,000,000 has been invested in the proposition.

To Save the Drowning—Press Floating Rib



Demonstrating the rescue of an unconscious woman bather while swimming on his back, using both hands to support the woman's head above water

Captain F. C. Mills, of the Life-Saving Section of the Atlantic Division of the American Red Cross, showing under-arm method of supporting drowning person

"LOTS of perfectly good barrels have been ruined by rolling drowned people on them," says Wilbert E. Longfellow, expert authority on athletics and water sports, who is field agent for the Life-Saving Section of the American Red Cross. "And it didn't do the poor victims any good, either," is the concluding dictum of the swimming expert.

That every swimmer may be a life-saver is the principle on which the Red Cross Life-Saving Corps is being established. Every season beaches and shore resorts take their toll in needless death. Men and women are drowned before the eyes of hundreds of onlookers because no one knows the simple methods of saving them, or they are brought to shore and allowed to suffocate because of the lack of knowledge among average people of the means of resuscitation, which, modern discovery shows, can prove effective after a person has been under water as long as thirty-five minutes.

It is the present effort of the Red Cross to spread broadcast a knowledge of practical life-saving among men, women and children, so that no community will be without its percentage of people with knowledge and skill sufficient to render this particular sort of "first aid" whenever needed arises.

Captain Frederick C. Mills, in charge of life-saving activity in the Red Cross Atlantic Division, gave a demonstration of Red Cross methods before officers and men at the United States Naval Air Station, Fort Tilden, Rockaway, recently, afterward instructing the naval aviators in the manner of rescue



Resuscitation by pressure on the floating ribs of a man rescued from drowning

and resuscitation. The Fort Tilden station is in charge of Commander R. W. Cabaniss, U. S. N.

So successful was the demonstration that it is possible the Red Cross will give similar instruction to all naval and army aviators, among whom such knowledge is not only desirable but essential. The recent experiences of the men on the NC flying boats, near the Azores, where members of the crew were a long time in peril from the water, is a case in point.

At Sheephead Bay exhibitions were also given recently of rescue and resuscitation work, showing,

among other things, that it is possible for a young girl of fourteen to rescue and revive a man weighing more than 200 pounds and a boy of eight years to tow in two unconscious men, one weighing more than 200 pounds. These demonstrations were given with the aid of Charles Scully, a well known United States life guard, who has a long list of rescues to his credit, and several Red Cross workers.

It is particularly desirable that a knowledge of rescue and resuscitation be spread among children, and to this end the Red Cross is under-

taking an extensive campaign of instruction.

The Yearly Toll

Ten thousand persons are suffocated, chiefly from drowning, each year in the United States and a large percentage could be saved were intelligent, scientific treatment promptly applied, the Red Cross experts claim.

The Shafer prone-pressure method of resuscitation, which is used by the Red Cross, is declared by experts to be the most effective means of artificial respiration known and Dr. Yandell Henderson, before the

third annual resuscitation convention of the National Electric Light Association, proclaimed it superior to any mechanical means of artificial respiration that has ever been used.

Many life guards, it has been learned, know very little about modern methods of resuscitation and, in some cases, little about the more improved methods of breaking "strangle holds" and other up-to-date means of handling drowning persons who may prove difficult to rescue. The Red Cross is giving its course to all official life-saving crews along the coast and at beach resorts, and where such crews do

mer and widely known as an authority on overcoming difficulties in the water. Describing the best resuscitation method, he says:

"Taken out of the element which causes smothering, the patient, in the case of drowning, should first be held upside down at an angle of about 45 degrees, and the floating ribs pressed and released several times, allowing the water to run out of the mouth. Then the patient should be placed face downward on a flat surface, the hands pulled from under the body and left higher than the shoulder level, this action raising the chest walls. In this position the tongue will drop forward out of the throat and the fluids will continue to run out of the mouth. The back of one of the patient's hands may be placed under his cheek to protect it from the dirt.

"The operator kneels astride the hips of the patient and rests his hands over the patient's floating ribs. By leaning the weight forward, straight-arm pressure, out goes the water. The pressure is released suddenly, and in comes the air. Repeating this from twelve to fifteen times a minute gives more air than natural breathing, and three times as much as any other method of resuscitation.

"When the patient is sufficiently resuscitated to be able to swallow—in other words, is conscious—it may be necessary to give stimulants. If the patient's hands are cold and clammy, he should be covered with a blanket, coat, canvas sail, or anything that will help to increase the body temperature. A cup of hot black coffee or hot tea is a safer stimulant than any alcoholic liquid. One or two teaspoonfuls of aromatic spirits of ammonia in half a glass of water is another stimulant that can be used.

"Work of resuscitation after the rescue cannot be begun too quickly. No patient should be carried any distance for shelter or to a doctor, but efforts to resuscitate should be begun at once. Send for a doctor at once, but begin work on the patient at once, also."

Mr. Longfellow is an expert swim-

"Ice Furnace" Cools Bell's Home

"YOU heat your house in winter; why not cool it in summer?"

This idea occurred to Dr. Alexander Graham Bell when the Washington weather became extremely sizzling.

Former President Taft, when he was in the White House, had a refrigerating device put in the offices, which since has fallen into disuse, but Dr. Bell believes he procured better results by his "home made" cooling arrangement in his Connecticut Avenue residence.

In a communication to the National Geographic Society Dr. Bell describes how he tricked the thermometer out of some 35 degrees—and you can try this out in your own home if you are "handy" about the house.

"We go up to the Arctic regions and heat our houses and live," he explains. "We go down to the tropics and die."

"I have found one radical defect in the construction of our houses that absolutely precludes the possibility of cooling them to any great degree. You will readily understand the difficulty, when you remember that cold air is heavier than warm air. You can take a bucket of cold air, for example, and carry it about in the summer time and not spill a drop; but if you make a hole in the bottom of your bucket, then, of course, the cold air would run out.

Weather Retreat

"I began to think that it might be possible to apply the bucket principle to at least one room in my Washington home, and thus secure a place of retreat in the summer time. It seemed to be advisable to close up all openings near the bottom of the room to prevent the escape of cold air and open the windows at the top to let out the heated air of the room.

"Now, it so happens that I have in the basement of my house a swimming tank, and it occurred to me that since this tank holds water, it should certainly hold cold air; so I turned the water out to study the situation. The tank seemed to be damp and the sides felt wet and slimy.

"I reflected, however, that the condensation of moisture resulted from the fact that the sides of the tank were cooler than the air admitted. Water vapor will not condense on anything that is warmer than itself, and it occurred to me that if I introduced air that was very much colder than I wanted to use, then it would be warming up in the tank and becoming dryer all the time. It would not deposit moisture on the sides and would actually absorb the moisture there.

"I therefore provided a refrigerator, in which were placed large blocks of ice, covered with salt. This was placed in another room at a higher elevation than the tank, and a pipe, covered with asbestos paper, was employed to lead the cold air into the tank.

Cold Air

"The first effect was the drying of the walls, and then I felt the level of the cold air gradually rising. At last it came over my head. The tank was full, and I found myself immersed in cool air. I felt so cool and comfortable that it seemed difficult to believe that Washington stood sizzling outside. I climbed up the ladder in the swimming tank until my head was above the surface, and then found myself breathing a hot, damp, muggy atmosphere. I therefore speedily retreated into the tank, where I was perfectly cool and comfortable.

"Guided by this experience, I tried another experiment in my house. I put the refrigerator in the attic and led the cold air downward through a pipe covered with asbestos into one of the rooms of the house. The doors were kept shut and the windows were opened at the top. The temperature in that room was perfectly comfortable, about 65 degrees.

"Some time ago the papers were speaking of an ice plant that had been installed in the White House, and congratulated the President, then Mr. Taft, upon a temperature of only 80 degrees when the thermometer showed 100 degrees outside. Under similar conditions, I enjoyed in my house a temperature of 65 degrees (the ideal temperature), with a delicious feeling of freshness in the air."

As Immigration Decreases, the Nation's Birth Rate Increases

THE relation of immigration to eugenics is an unusual subject dealt with by "The Journal of Heredity," which goes on to say:

"There is one aspect of immigration restriction in the various countries which does not often receive much attention, namely, the possibility of its use as a method of world eugenics. Most persons think of migration in terms of space—the moving of a certain number of people from one part of the earth's surface to another. Whereas the much more important aspect of it is that of a functioning of time.

"This comes from two facts. The first is that the vacuum left in any country by emigration is rapidly filled up through a rise in birth rate. There are more people in England to-day than in the time of Elizabeth, in spite of the enormous emigration from that country to all parts of the world; and there are just as many sparrows in England to-day in spite of the unfortunate spread of those birds in the United States.

"The vacuum is chiefly filled by the breeding of the lower classes. Thus, according to Professor Pearson, more

than one-half the births in England are now from the lowest one-sixth of the population. In Italy a similar condition fills the vacuum left by the very large emigration from there to North and South America.

Effect of Immigration

"The second fact is that the immigration to any country of a given stratum of population tends to sterilize all strata of higher social and economic levels already in that country. So true is this that nearly all students of the matter are agreed that the United States would have a larger population to-day if there had been no immigration since 1820; and, it is needless to add, a much more homogeneous population."

The writer, Mr. Prescott F. Hall, believes that so long as the community is relatively homogeneous differences in wealth and social position do not affect the birth rate, or do so "only after a considerable time." It is when the mentally inferior enter by immigration that the natives are unwilling to have their children associate with the children of these immigrants in work or social life, thus lowering

the birth rate. New England has proved this, the writer says.

Continuing:

"This is not to say that other causes do not contribute to lower the birth rate of a country; for that is an almost worldwide phenomenon. But the desire to be separated from inferiors is as strong a motive to birth control as the desire for luxury or to ape one's economic superiors.

"Races follow Gresham's law as to money; the poorer of two kinds in the same place tends to supplant the better. Mark you supplant; not drive out. One of the most common fallacies is the idea that the natives whose places are taken by lower immigration are 'driven up' to more responsible positions. A few may be pushed up; more are driven to a new locality, as happened in the mining regions; but most are prevented from coming into existence at all."

Mr. Hall then proceeds to a conclusion: "What is the result then of the migration of a million persons of lower level into a country where the average is of a higher level? Considering the world as a whole, there are, after a few years, two million persons of the lower type in the world, and probably

from half a million to a million less of the higher type. The proportion of lower to higher in the country from which the migration goes may remain the same; but in the country receiving it it has risen. Is the world as a whole the gainer?"

"Of course, the eugenist says at once that these immigrants are improved. We may grant that, although the improvement is probably much exaggerated. You cannot make and stock into good by changing its meridian, any more than you can turn a cart horse into a hunter by putting it into a fine stable, or make a mongrel into a fine dog by teaching it tricks. But such improvement as there is involves time, expense and trouble; and, when it is done, has anything been gained? Will any one say that the races that have supplanted the old Nordic stock in New England are any better, or as good, as the descendants of that stock would have been if their birth rate had not been lowered?"

"Further, in addition to the purely biological aspects of the matter, there are certain psychological ones. Although a cosmopolitan atmosphere furnishes a certain freedom in which strong congenial talents can develop, it is a question whether as many are not injured as helped by this. Indeed,

there is considerable evidence to show that for the production of great men a certain homogeneity of development is necessary. The reason of this is very simple. In a homogeneous community opinions on a large number of matters are fixed. The individual does not have to attend to such things; but is free to go ahead on some special line of his own, to concentrate to his limit on his work, even though that work be fighting the common opinions.

Crossbreeding

"But in a community of many races there is either crossbreeding or there is not. If there is the children of such crossbreeding are liable to inherit two souls, two temperaments, two sets of opinions, with the result in many cases that they are unable to think or act strongly and consistently in any direction. The classic examples are Cuba, Mexico and Brazil.

"On the other hand, if there is no crossbreeding the diversity exists in the original races, and in a community full of diverse ideals of all kinds much of the energy of the higher type of man is dissipated, and in two ways. "The moral seems to be this: Eugenics among individuals is encouraging the propagation of the fit and limiting or preventing the multiplica-

tion of the unfit. World eugenics is doing precisely the same thing as to races considered as wholes. Immigration restriction is a species of segregation on a large scale, by which inferior stocks can be prevented from both diluting and supplanting good stocks."

That this subject has a relevant bearing on current world politics the writer maintains in the following: "This result is not merely a selfish benefit to the higher races, but a good to the world as a whole. The object is to produce the greatest number of the fittest not 'for survival' merely, but fittest for all purposes. The lower types among men progress, so far as their racial inheritance allows them to, chiefly by imitation and emulation. The presence of the highest development and the highest institutions among any race is a distinct benefit to all the others. It is a gift of psychological environment to any one capable of appreciation.

"It is important, therefore, that nothing in the constitution of the league of nations shall limit the right of any nation to decide who shall be admitted into its life; for, as Le Bon says, a preponderance of foreign elements destroys the most precious thing it possesses—its own soul."